

**Presenilin 1 Antibody (C-term) [Knockout Validated]  
Purified Rabbit Polyclonal Antibody (Pab)  
Catalog # AW5708**

**Specification**

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**Presenilin 1 Antibody (C-term) [Knockout Validated] - Product Information**

Application	IF, WB, IHC-P, FC,E
Primary Accession	<a href="#">P49768</a>
Other Accession	<a href="#">P97887</a> , <a href="#">P49769</a> , <a href="#">Q8HXW5</a>
Reactivity	Human
Predicted	Mouse, Rat, Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Source	HUMAN

**Presenilin 1 Antibody (C-term) [Knockout Validated] - Additional Information**

**Gene ID** 5663

**Antigen Region**  
330-359

**Other Names**

Presenilin-1, PS-1, 3423-, Protein S182, Presenilin-1 NTF subunit, Presenilin-1 CTF subunit, Presenilin-1 CTF12, PS1-CTF12, PSEN1, AD3, PS1, PSNL1

**Dilution**

IF~~1:10~50  
WB~~1:500-1:2000  
IHC-P~~1:50~100  
FC~~1:10~50

**Target/Specificity**

This Presenilin 1 (PSEN1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 330-359 amino acids from the C-terminal region of human Presenilin 1 (PSEN1).

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Presenilin 1 Antibody (C-term) [Knockout Validated] is for research use only and not for use in diagnostic or therapeutic procedures.

## Presenilin 1 Antibody (C-term) [Knockout Validated] - Protein Information

**Name** PSEN1

**Synonyms** AD3, PS1, PSNL1

### Function

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 (amyloid- beta precursor protein) (PubMed: <a href="http://www.uniprot.org/citations/10206644" target="\_blank">10206644</a>, PubMed: <a href="http://www.uniprot.org/citations/10545183" target="\_blank">10545183</a>, PubMed: <a href="http://www.uniprot.org/citations/10593990" target="\_blank">10593990</a>, PubMed: <a href="http://www.uniprot.org/citations/10811883" target="\_blank">10811883</a>, PubMed: <a href="http://www.uniprot.org/citations/10899933" target="\_blank">10899933</a>, PubMed: <a href="http://www.uniprot.org/citations/12679784" target="\_blank">12679784</a>, PubMed: <a href="http://www.uniprot.org/citations/12740439" target="\_blank">12740439</a>, PubMed: <a href="http://www.uniprot.org/citations/15274632" target="\_blank">15274632</a>, PubMed: <a href="http://www.uniprot.org/citations/20460383" target="\_blank">20460383</a>, PubMed: <a href="http://www.uniprot.org/citations/25043039" target="\_blank">25043039</a>, PubMed: <a href="http://www.uniprot.org/citations/26280335" target="\_blank">26280335</a>, PubMed: <a href="http://www.uniprot.org/citations/28269784" target="\_blank">28269784</a>, PubMed: <a href="http://www.uniprot.org/citations/30598546" target="\_blank">30598546</a>, PubMed: <a href="http://www.uniprot.org/citations/30630874" target="\_blank">30630874</a>). Requires the presence of the other members of the gamma-secretase complex for protease activity (PubMed: <a href="http://www.uniprot.org/citations/15274632" target="\_blank">15274632</a>, PubMed: <a href="http://www.uniprot.org/citations/25043039" target="\_blank">25043039</a>, PubMed: <a href="http://www.uniprot.org/citations/26280335" target="\_blank">26280335</a>, PubMed: <a href="http://www.uniprot.org/citations/30598546" target="\_blank">30598546</a>, PubMed: <a href="http://www.uniprot.org/citations/30630874" target="\_blank">30630874</a>). 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 (PubMed: <a href="http://www.uniprot.org/citations/10593990" target="\_blank">10593990</a>, PubMed: <a href="http://www.uniprot.org/citations/10811883" target="\_blank">10811883</a>, PubMed: <a href="http://www.uniprot.org/citations/10899933" target="\_blank">10899933</a>, PubMed: <a href="http://www.uniprot.org/citations/9738936" target="\_blank">9738936</a>). Stimulates cell-cell adhesion via its interaction with CDH1; this stabilizes the complexes between CDH1 (E-cadherin) and its interaction partners CTNNB1 (beta-catenin), CTNND1 and JUP (gamma-catenin) (PubMed: <a href="http://www.uniprot.org/citations/11953314" target="\_blank">11953314</a>). Under conditions of apoptosis or calcium influx, cleaves CDH1 (PubMed: <a href="http://www.uniprot.org/citations/11953314" target="\_blank">11953314</a>). This promotes the disassembly of the complexes between CDH1 and CTNND1, JUP and CTNNB1, increases the pool of cytoplasmic CTNNB1, and thereby negatively regulates Wnt signaling (PubMed: <a href="http://www.uniprot.org/citations/11953314" target="\_blank">11953314</a>, PubMed: <a href="http://www.uniprot.org/citations/9738936" target="\_blank">9738936</a>). Required for normal embryonic brain and skeleton development, and for normal angiogenesis (By similarity). Mediates the proteolytic cleavage of EphB2/CTF1 into EphB2/CTF2 (PubMed: <a href="http://www.uniprot.org/citations/17428795" target="\_blank">17428795</a>, PubMed: <a href="http://www.uniprot.org/citations/28269784" target="\_blank">28269784</a>). The holoprotein functions as a calcium-leak channel that allows the passive movement of calcium from endoplasmic reticulum to cytosol and is therefore involved in calcium homeostasis (PubMed: <a href="http://www.uniprot.org/citations/16959576" target="\_blank">16959576</a>, PubMed: <a href="http://www.uniprot.org/citations/25394380" target="\_blank">25394380</a>). Involved in the regulation of neurite outgrowth (PubMed: <a href="http://www.uniprot.org/citations/15004326" target="\_blank">15004326</a>, PubMed: <a href="http://www.uniprot.org/citations/20460383" target="\_blank">20460383</a>

target="\_blank">20460383</a>). Is a regulator of presynaptic facilitation, spike transmission and synaptic vesicles replenishment in a process that depends on gamma-secretase activity. It acts through the control of SYT7 presynaptic expression (By similarity).

#### Cellular Location

Endoplasmic reticulum. Endoplasmic reticulum membrane; Multi-pass membrane protein. Golgi apparatus membrane; Multi-pass membrane protein. Cytoplasmic granule. Cell membrane; Multi-pass membrane protein. Cell projection, growth cone. Early endosome. Early endosome membrane; Multi-pass membrane protein. Cell projection, neuron projection. Cell projection, axon {ECO:0000250|UniProtKB:Q4JIM4}. Synapse {ECO:0000250|UniProtKB:Q4JIM4}. Note=Translocates with bound NOTCH1 from the endoplasmic reticulum and/or Golgi to the cell surface (PubMed:10593990). Colocalizes with CDH1/2 at sites of cell-cell contact. Colocalizes with CTNBN1 in the endoplasmic reticulum and the proximity of the plasma membrane (PubMed:9738936). Also present in azurophil granules of neutrophils (PubMed:11987239). Colocalizes with UBQLN1 in the cell membrane and in cytoplasmic juxtannuclear structures called aggresomes (PubMed:21143716).

#### Tissue Location

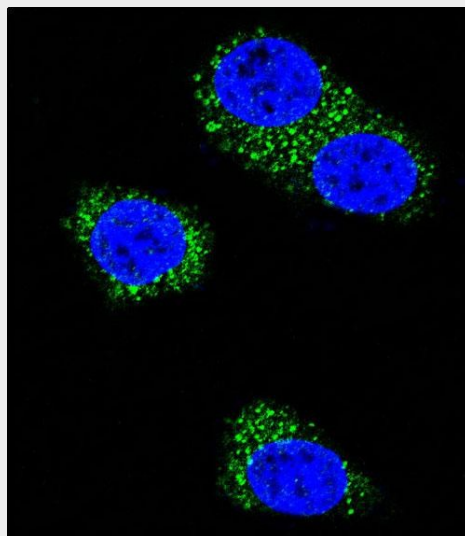
Detected in azurophilic granules in neutrophils and in platelet cytoplasmic granules (at protein level) (PubMed:11987239) Expressed in a wide range of tissues including various regions of the brain, liver, spleen and lymph nodes (PubMed:7596406, PubMed:8574969, PubMed:8641442).

### Presenilin 1 Antibody (C-term) [Knockout Validated] - Protocols

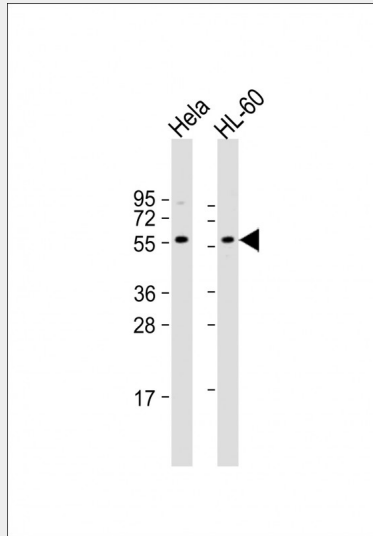
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

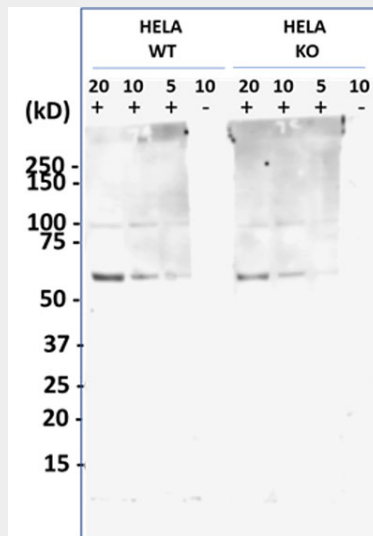
### Presenilin 1 Antibody (C-term) [Knockout Validated] - Images



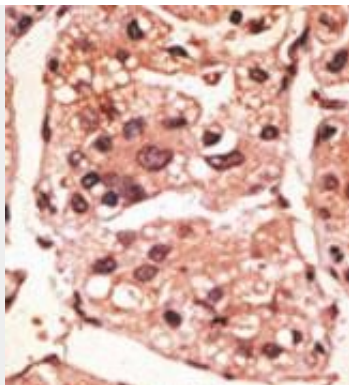
Confocal immunofluorescent analysis of Presenilin 1 (PSEN1) Antibody (C-term)(Cat#AP6231a) with MDA-MB435 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green).DAPI was used to stain the cell nuclear (blue).



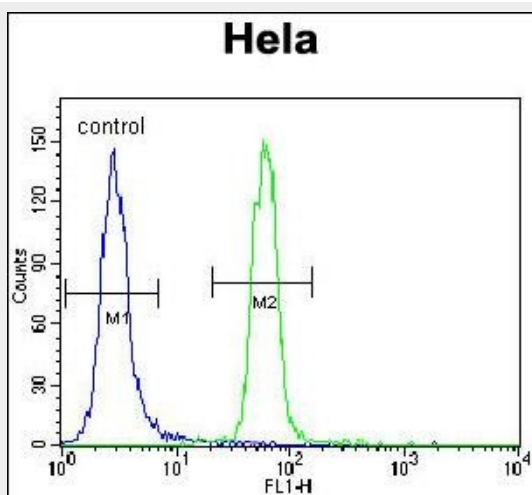
All lanes : Anti-PSEN1 Antibody (C-term) at 1:1000 dilution Lane 1: HeLa whole cell lysate Lane 2: HL-60 whole cell lysate Lysates/proteins at 20  $\mu$ g per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 53 kDa Blocking/Dilution buffer: 5% NFDN/TBST.



A dominant 59.6 kDa band and faint 87.6 kDa band for both the HeLa wild type and knock out lysates were observed (3  $\mu$ g/ml anti-PSEN1) vs the predicted size of 52.7 kDa. The molecular weight discrepancy could be due a post-translationally modified form of the target protein, a splice-variant form of the target protein, or an unrelated protein which shares the antibody-reactive epitope. The presence of bands in the knock out lysates suggest incomplete knockout of the target gene.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Presenilin 1 (PSEN1) Antibody (C-term) (Cat. #AP6231a) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

#### **Presenilin 1 Antibody (C-term) [Knockout Validated] - Background**

Alzheimer's disease (AD) patients with an inherited form of the disease carry mutations in the presenilin proteins (PSEN1; PSEN2) or the amyloid precursor protein (APP). These disease-linked mutations result in increased production of the longer form of amyloid-beta (main component of amyloid deposits found in AD brains). Presenilins are postulated to regulate APP processing through their effects on gamma-secretase, an enzyme that cleaves APP. Also, it is thought that the presenilins are involved in the cleavage of the Notch receptor, such that they either directly regulate gamma-secretase activity or themselves are protease enzymes.

#### **Presenilin 1 Antibody (C-term) [Knockout Validated] - References**

Marambaud, P., et al., Cell 114(5):635-645 (2003). Kim, S.H., et al., J. Biol. Chem. 278(36):33992-34002 (2003). Miklossy, J., et al., Neurobiol. Aging 24(5):655-662 (2003). Cai, D., et al., J. Biol. Chem. 278(5):3446-3454 (2003). Godin, C., et al., Neuroreport 14(12):1613-1616 (2003).

#### **Presenilin 1 Antibody (C-term) [Knockout Validated] - Citations**

- [Nicotine decreases beta-amyloid through regulating BACE1 transcription in SH-EP1- \$\beta\$ 42 nAChR-APP695 cells.](#)

