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# Presenilin 1 (PSEN1) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6231A

## Product Information

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| **Application** | WB, IHC-P, FC, IF, E |
| **Primary Accession** | P49768 |
| **Other Accession** | P97887, P49769, Q8HXW5 |
| **Reactivity** | Human, Rat, Mouse |
| **Predicted** | Rat, Monkey, Rabbit |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Calculated MW** | 52668 |
| **Antigen Region** | 330-359 |

## Additional Information

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| **Gene ID** | 5663 |
| **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 |
| **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). |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 IF~~1:10~50 E~~Use at an assay dependent concentration. |
| **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 (PSEN1) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | PSEN1 ( HGNC:9508) |
| **Synonyms** | AD3, PS1, PSNL1 |

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| **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:10206644, PubMed:10545183, PubMed:10593990, PubMed:10811883, PubMed:10899933, PubMed:12679784, PubMed:12740439, PubMed:15274632, PubMed:20460383, PubMed:25043039, PubMed:26280335, PubMed:28269784, PubMed:30598546, PubMed:30630874). Requires the presence of the other members of the gamma-secretase complex for protease activity (PubMed:15274632, PubMed:25043039, PubMed:26280335, PubMed:30598546, PubMed:30630874). 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:10593990, PubMed:10811883, PubMed:10899933, PubMed:9738936). 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:11953314). Under conditions of apoptosis or calcium influx, cleaves CDH1 (PubMed:11953314). 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:11953314, PubMed:9738936). 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:17428795, PubMed:28269784). 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:16959576, PubMed:25394380). Involved in the regulation of neurite outgrowth (PubMed:15004326, PubMed:20460383). 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 CTNNB1 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 juxtanuclear structures called aggresomes (PubMed:21143716). Also highly enriched in mitochondria-associated endoplasmic reticulum membrane contact site (By similarity). {ECO:0000250\|UniProtKB:P49769, ECO:0000269\|PubMed:10593990, ECO:0000269\|PubMed:11987239, ECO:0000269\|PubMed:21143716, ECO:0000269\|PubMed:9738936} |
| **Tissue Location** | Detected in azurophile 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). |

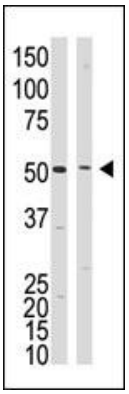
## Background

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.

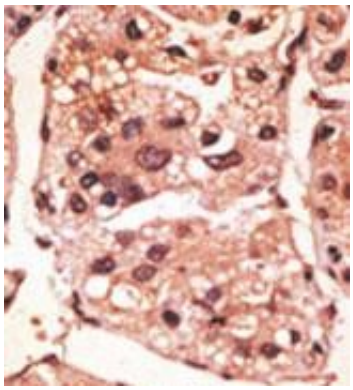
## References

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).

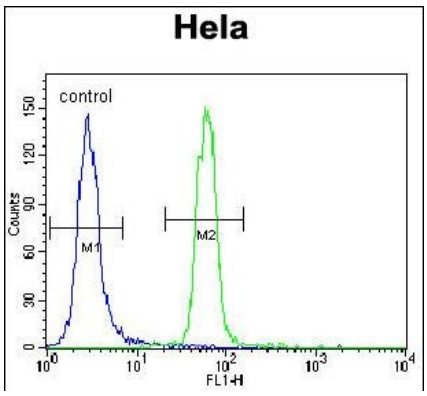
## Images




The Presenilin 1 (PSEN1) Antibody (C-term) (Cat.#AP6231a) is used in Western blot to detect PSEN1 in mouse kidney tissue lysate (lane 1) and HL60 cell lysate (lane 2) lysate.

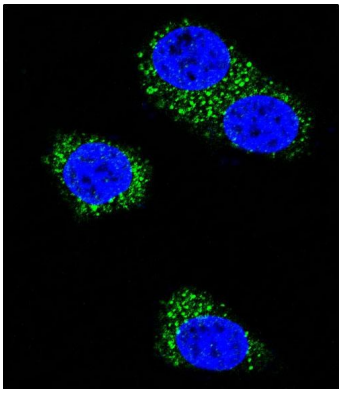


Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast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

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 lgG (green).DAPI was used to stain the cell nuclear (blue).

## Citations

- Nicotine decreases beta-amyloid through regulating BACE1 transcription in SH-EP1- □±4 □?2 nAChR-APP695 cells.

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