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Presenilin1 Antibody
Catalog # ASC10533

Specification

Presenilin1 Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	P49768
Other Accession	NP_000012, 4506163
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**Presenilin1 antibody can be used for detection of presenilin1 by Western blot at 0.5 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.**

Presenilin1 Antibody - Additional Information

Gene ID **5663**

Other Names
Presenilin1 Antibody: AD3, FAD, PS1, PS-1, S182, AD3, PSNL1, Presenilin-1, Protein S182, presenilin 1

Target/Specificity
PSEN1;

Reconstitution & Storage
Presenilin1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
Presenilin1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Presenilin1 Antibody - 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, 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).

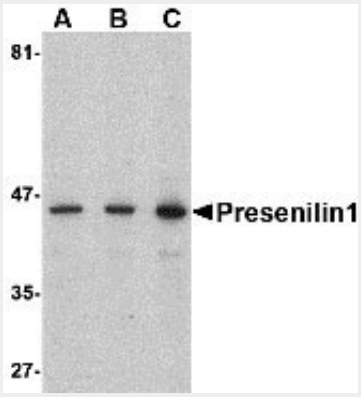
Tissue Location
Detected in azurophile granules in neutrophils and in platelet cytoplasmic granules (at protein level) (PubMed:11987239) Expressed in a wide range of tissues including various regions of the brain, liver, spleen and lymph nodes (PubMed:7596406, PubMed:8574969, PubMed:8641442).

Presenilin1 Antibody - Protocols

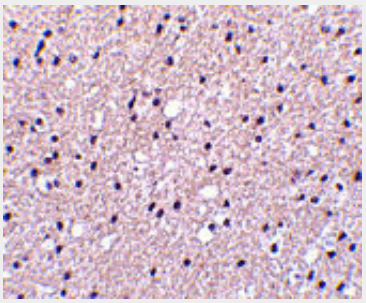
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Presenilin1 Antibody - Images



Western blot analysis of presenilin1 in human brain lysate with presenilin1 antibody at (A) 0.5, (B) 1, and (C) 2 µg/mL.



Immunohistochemistry of Presenilin1 in human brain tissue with Presenilin1 antibody at 2.5 µg/mL.

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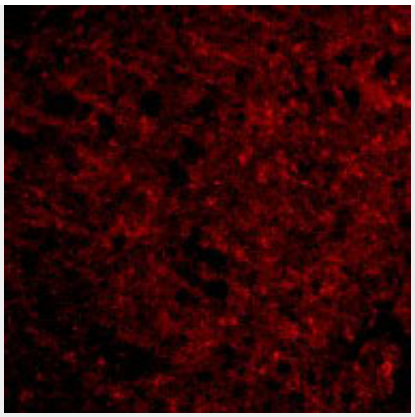

Immunofluorescence of Presenilin1 in Human Brain cells with Presenilin1 antibody at 20 µg/mL.

Presenilin1 Antibody - Background

Presenilin1 Antibody: Presenilin1 was initially identified a marker of susceptibility to early-onset Alzheimer's disease. In addition to PEN2, nicastrin and APH-1, Presenilin1 forms the gamma-secretase protein complex, a membrane-bound aspartyl protease that can cleave certain proteins at peptide bonds buried within the hydrophobic environment of the lipid bilayer. This cleavage is responsible for a key step in signaling from several cell-surface receptors and is thought to be required for the generation of the neurotoxic amyloid peptides that are central to the pathogenesis of Alzheimer's disease. Like the tumor necrosis factor-alpha-converting enzyme (TACE) and the beta-site cleavage enzyme (BACE) protease families, gamma-secretase will cleave the amyloid precursor protein (APP), but within the intramembrane region of APP, resulting in either the non-toxic p3 (from the alpha and gamma cleavage site) or the toxic Abeta amyloid peptide (from the beta and gamma cleavage site). It is thought that accumulation of the Abeta peptide is the precursor to Alzheimer's disease. Multiple isoforms of presenilin1 are known to exist. This antibody has no cross-reactivity to presenilin2.

Presenilin1 Antibody - References

Sherrington R, Rogaev EI, Liang Y, et al. Cloning of a gene bearing missense mutations in early-onset familial Alzheimer’s disease. Nature1995; 375:754-60.
Weihofen A and Martoglio B. Intramembrane-cleaving proteases: controlled liberation of proteins and bioactive peptides. Trends Cell Biol.2003; 13:71-8.
Periz G and Fortini ME. Functional reconstitution of g-secretase through coordinated expression of presenilin, nicastrin, aph-1, and pen-2. J. Neurosci. Res.2004; 77:309-22.
Selkoe DJ. The cell biology of b-amyloid precursor protein and presenilin in Alzheimer’s disease. Trends Cell Biol.1998; 8:447-53.