

KD-Validated Anti-Presenilin 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1826

Product Information

Application	WB, FC
Primary Accession	P49768
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB4515
Calculated MW	52668
Gene Name	PSEN1
Aliases	PSEN1; Presenilin 1; PSNL1; PS-1; PS1; S182; FAD; AD3; Familial Alzheimer Disease; Presenilin-1; Alzheimer Disease 3; Protein S182; EC 3.4.23.-; EC 3.4.23; ACNINV3
Immunogen	A synthesized peptide derived from human Presenilin 1

Additional Information

Gene ID	5663
Other Names	Presenilin-1, PS-1, 3.4.23.-, Protein S182, Presenilin-1 NTF subunit, Presenilin-1 CTF subunit, Presenilin-1 CTF12, PS1-CTF12, PSEN1, AD3, PS1, PSNL1

Protein Information

Name	PSEN1 (HGNC:9508)
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: 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 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).

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