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PEN2 Antibody

Catalog # ASC10475

Product Information

Application	WB, IF, E
Primary Accession	Q9NZ42
Other Accession	NP_758844, 28144920
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	12029
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	PEN2 antibody can be used for detection of PEN2 by Western blot at 0.5 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 20 g/mL.

Additional Information

Gene ID	55851
Other Names	PEN2 Antibody: PEN2, PEN-2, MDS033, MSTP064, PEN2, Gamma-secretase subunit PEN-2, Presenilin enhancer protein 2, presenilin enhancer 2 homolog (C. elegans)
Target/Specificity	PSENEN;
Reconstitution & Storage	PEN2 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	PEN2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PSENEN
Synonyms	PEN2
Function	Essential 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:12522139, PubMed:12679784, PubMed:12740439, PubMed:12763021, PubMed:24941111, PubMed:30598546, PubMed:30630874). The gamma-secretase complex 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 (Probable). PSENEN modulates both endoproteolysis of presenilin and gamma-secretase activity (PubMed:12522139, PubMed:12679784, PubMed:12740439, PubMed:12763021, PubMed:24941111). Besides its role in gamma-secretase complex, acts as a regulator of AMP-activated protein kinase (AMPK) activity in response to calorie restriction: binds metformin, an antidiabetic drug, promoting association with ATP6AP1, a subunit of the V-ATPase complex, leading to V-ATPase complex inhibition on lysosomes and AMPK activation via the AXIN1-STK11/LKB1 axis (By similarity).
Cellular Location	Endoplasmic reticulum membrane; Multi-pass membrane protein. Golgi apparatus, Golgi stack membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Membrane; Multi-pass membrane protein Note=Predominantly located in the endoplasmic reticulum and in the cis- Golgi.
Tissue Location	Widely expressed. Expressed in leukocytes, lung, placenta, small intestine, liver, kidney, spleen thymus, skeletal muscle, heart and brain.

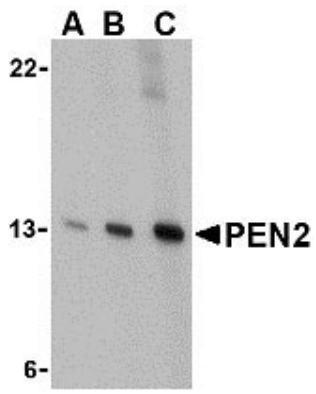
Background

PEN2 Antibody: PEN2, in addition to presenilin, nicastrin, and APH-1 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.

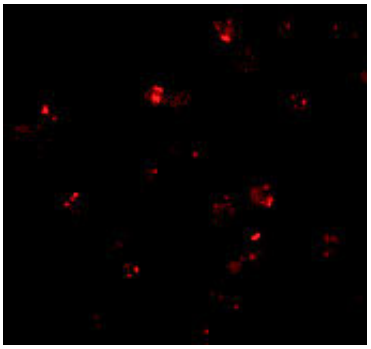
References

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.
Selkoe SJ. Translating cell biology into therapeutic advances in Alzheimer’s disease. Nature 1999; 399:A23-31

Images



Western blot analysis of PEN2 in K562 cell lysate with PEN2 antibody at (A) 0.5, (B) 1, and (C) 2 µg/mL.



Immunofluorescence of PEN2 in K562 cells with PEN2 antibody at 20 µg/mL.

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