Revision 1

Store at -20C

#5451

PEN2 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	13	Rabbit	#Q9NZ42	55851

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

PEN2 Antibody detects endogenous levels of total PEN2 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys11 of human PEN2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Presenilin Enhancer 2 (PEN2) is a small integral membrane glycoprotein that contains two recognized transmembrane domains. Both the N- and C-terminal domains are oriented into the lumen of the endoplasmic reticulum (1). PEN2, along with Presenilin 1, Presenilin 2, Nicastrin, and APH-1 form the protein complex γ-secretase (2). The proteinase BACE catalyses the initial step in APP processing by cleaving and releasing soluble APPβ (3). The remaining membrane bound APP is then cleaved by the γ-secretase complex, causing the release of amyloid β-peptide, the main constituent of amyloid plaques. These plaques are a hallmark of Alzheimer's disease pathology (2). In addition to APP, the γ-secretase complex cleaves several other proteins and necessary presenilin-dependent signaling cascades, including the Notch pathway (4). It was found that PEN2 is an important part of the γ-secretase complex, and knocking it down results in reduced amounts of the complex, resulting in a loss of γ-secretase activity (5).

Background References

1. Sala Frigerio, C. et al. (2005) *J Neurol* 252, 1033-6.
2. Hansson, C.A. et al. (2004) *J Biol Chem* 279, 51654-60.
3. Hunt, C.E. and Turner, A.J. (2009) *FEBS J* 276, 1845-59.
4. St George-Hyslop, P. and Schmitt-Ulms, G. (2010) *Nature* 467, 36-7.
5. Steiner, H. et al. (2002) *J Biol Chem* 277, 39062-5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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Limited Uses

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