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ProductInformation

Anti-Pen-2
Developed in Rabbit, Affinity Isolated Antibody

Product Number **P 5622**

Product Description

Anti-Pen-2 is developed in rabbit using a synthetic peptide encoding amino acids 86-101 located at the C-terminus of human Pen-2, conjugated to KLH, as immunogen. This sequence is identical in mouse Pen-2. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

The antibody recognizes Pen-2 (10 kDa). Applications include immunoblotting. Staining of the Pen-2 band in immunoblotting is specifically inhibited with the Pen-2 immunizing peptide (human, amino acids 86-101).

The γ-secretase complex is an unusual high molecular weight (500-600 kDa) multimeric aspartyl protease responsible for the intramembrane cleavage of a variety of type I transmembrane proteins including the β-amyloid precursor protein (β-APP), and the developmental signaling receptor Notch/Glp-1.[1,2] γ-Secretase is intimately associated with the pathogenesis of Alzheimer's disease because β-amyloid is generated by the γ-secretase-mediated cleavage of β-APP. This proteolytic activity is also essential for the proper functioning of the Notch receptor, and additional substrates require γ-secretase-mediated processing to release the signaling moieties. Genetic and biochemical data have revealed that this protease complex consists of the presenilin (PS1, PS2) heterodimer, a highly glycosylated form of nicastrin (Nct) and the gene products of Aph-1 and Pen-2.[3-6] Pen-2 is an integral membrane protein (101 amino acids), containing two transmembrane domains and a cytosolic loop domain, with the C- and N-termini facing the lumen of the endoplasmic reticulum.[7] Pen-2 is a critical component of the PS1/γ-secretase and PS2/γ-secretase complexes.[8] In the absence of PS1 and PS1/PS2, Pen-2 levels are strongly reduced. Similarly, Pen-2 levels are reduced upon siRNA-mediated down-regulation of Nct. Down-regulation of Pen-2 by siRNA is associated with reduced PS levels, impaired Nct maturation and deficient γ-secretase complex formation. Pen-2 preferentially interacts with PS1. Down-regulation of Pen-2 by siRNA abolishes the endoproteolysis of PS1, whereas overexpression of Pen-2 promotes the production of PS1 fragments.[9] In cells coexpressing PS1, Aph-1 and Nct, full-length PS1 accumulates to high levels and is stable.[10] Upon coexpression of Pen-2, the levels of PS1 are significantly reduced, concomitant with an elevation in levels of PS1 fragments over endogenous levels, and a marked accumulation of β-APP-CTFγ, suggesting that Aph-1 and Nct are necessary for stabilization of full-length PS1 and that Pen-2 is critical for the proteolytic cleavage of stabilized PS1.

Reagent

The product is provided as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: approx. 3 mg/ml

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 3-6 µg/ml is determined by immunoblotting, using a whole extract of human kidney 293 cells expressing human Pen-2.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

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