

Product Specification Sheet

Presenilin-2 Antibodies

Cat. # PS21-S	Rabbit Anti-Human Presenilin-2 antiserum #1	SIZE: 100 ul
Cat. # PS21-A	Rabbit Anti-Human Presenilin-2 Ig G #1 (aff pure)	SIZE: 100 ug
Cat. # PS21-P	Human Presenilin-2 control/blocking peptide	SIZE: 100 ug

Alzheimer's Disease (AD) is a neurodegenerative disorder characterized by progressive loss of memory and cognition in the elderly. A number of genes have been linked in the initiation and development of AD. One of the most important and initial step involves proteolytic cleavage of amyloid precursor protein (APP, chromosome 21) releasing short 40, 42 & 43 aa peptides (b amyloid 1-40, 1-42, and 1-43). Polymerization of b-amyloid (Ab) and subsequent neuronal deposit (amyloid) leads to the degeneration of neurons involved in memory and cognition. Mutations in the APP gene cause some forms of familial AD (FAD) by releasing an increased amounts of b-amyloid. The AD Ab deposits also contain anti-chymotrypsin (ACT), and Apolipoprotein (Apo-E) that may promote Ab polymerization.

An early onset of FAD has also been linked to some 30 mutations in two related genes, **Presenilins-1** (PS-1 on chromosome 14; 467 aa) and **Presenilins-2** (PS-2 on chromosome 1; 448 aa). Presenilins may contain 7-9 transmembrane domains. Presenilins are members of an evolutionary conserved gene family. PS1 and PS2 are 67% identical, and show significant homology to *C. elegans* genes sel-12 (~50 homology) and spe-4 (~20% identity). Both PS1 and PS2 genes are expressed in several human and rat tissues. In the CNS, the two genes are predominately expressed in neurons. Have PS-1/2 have been co-localized in subcellular sites involved in cell cycle regulation and mitosis (the nuclear membrane, interphase kinetochore, and centrosome).

FUNCTION: Probable 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 (beta-amyloid precursor protein).

SUBCELLULAR LOCATION: Endoplasmic reticulum membrane; Multi-pass membrane protein. Golgi apparatus membrane; Multi-pass membrane protein.

SIMILARITY: Belongs to the peptidase A22A family [view classification].

Protein name Presenilin-2

Synonyms EC 3.4.23.-, PS-2, STM-2, E5-1 AD3LP, AD5

Gene name Name: PSEN2, Synonyms: AD4, PS2, PSNL2, STM2

Source of Antigen and Antibodies

Antigen	18-aa peptide from human PS-2 (1); (protein accession #P49810 , refs 1) Designation (PS21-P, control peptide) conjugated to KLH; Epitope location~N-terminal
Ab Host/type	Rabbit, Polyclonal
Ab Format	Unpurified antiserum (cat #PS21-S) Affinity pure (cat # PS21-A)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)

100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide

Reconstitute powder in 100 ul PBS

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Immunoprecipitations: We recommend 5-10 ul neat serum or 1-10 ug affinity pure antibody per 100 ug of tissue (1)..

Histochemistry & Immunofluorescence: We recommend the use of affinity purified antibody at 2-20 ug/ml (1,2).

Specificity & Cross-reactivity

Human PS21-P peptide has 100% homology to human, mouse, bovine rat and 83% to chicken Presenilin-2. There is no significant homology with other known proteins. The Presenilin-2 antibody cross-reactivity in other species is not known. The appropriate control immunogenic peptides are also available to confirm specificity of antibodies. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity

General References:

Moussaoui, S. (1996) *FEBS Lett.*383, 219-222; Blanchard, V.et al. (1997) *Brain Res.*, 758, 209-217; Li, J., et al. (1997) *Cell*, 90, 917-927.

*This product is for *in vitro* research use only.

Related material available from ADI:

Antibodies against ERAB; Synucleins, Beta-Amyloid; .

Western Blot recycling kit (Use the same blot to probe with multiple antibodies SYN, CLO11, etc.) **recycle blot at room temp in 5-10 min;** No mercaptoethanol or heating required).

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