

Product Specification Sheet

Presenilin-1 Antibodies

| | | |
|----------------------|--|---------------------|
| Cat. # PS13-S | Goat Anti-Human Presenilin-1 antiserum, Ab # 3 | SIZE: 100 ul |
| Cat. # PS13-P | Human Presenilin-1 control/blocking peptide #3 | 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-1

Synonyms EC 3.4.23.-

PS-1, Protein S182

Gene name Name: PSEN1; Synonyms: AD3, PS1, PSNL1

Source of Antigen and Antibodies

| | |
|---------------------|--|
| Antigen | 20-aa peptide from human PS-1 (1);(protein accession #P49768 , refs 1) Designation (PS13-P, control peptide) conjugated to KLH; Epitope location ~N-terminus, Extracellular |
| Ab Host/type | Goat, Polyclonal antiserum #P13-S |
| Ab Format | Cat # 30220, Rabbit anti-goat IgG-HRP (AP, biotin, FITC conjugates also available |
| -ve control | # 20011-1, goat (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control |

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified, undiluted)

| | |
|-----------------------------|-------------------------------|
| 100 ul/vial solution | 50 ul/vial lyophilized powder |
| contains 0.05% sodium azide | |

Reconstitute powder in the original vol. of water

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Buffer: PBS, pH 7.5 and 0.05% sodium azide

Reconstitute powder in the original vol. of water

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

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

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting (1:1K-5K for neat serum using Chemiluminescence technique).

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

Immunoprecipitations: We recommend 5-10 ul neat per 100 ug of tissue (1)..

Histochemistry & Immunofluorescence: We recommend a dilution of 1:200 to 1:500).

Specificity & Cross-reactivity

The immunogenic peptide sequences from Presenilin-1, PS13-P shows 100% homology to monkey, lemur, 95% with bovine, 70% with mouse, and 80% with rat PS1. No significant homology exists with PS2 or other known proteins. Antibody cross-reactivity in various species has not been studied. 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).

| | |
|----------|--------|
| PS13-S-P | 70912J |
|----------|--------|