

Abeta-pE3

Cat.No. 218 611; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Azide was added before lyophilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) (see remarks) IP: not tested yet ICC: not tested yet IHC: 1 : 100 (see remarks) IHC-P (FFPE): 1 : 500 (see remarks)
Clone	70D7
Subtype	IgG3 (κ light chain)
Immunogen	Synthetic peptide corresponding to the amino terminal part of human Abeta-pE3 (UniProt Id: P05067)
Reactivity	Reacts with: human (P05067), rat (P08592), mouse (P12023). Other species not tested yet.
Specificity	Recognizes specific oligomeric structures formed preferentially by Abeta-pE3.
Remarks	WB: Due to the small size of this protein/peptide, we recommend a 16% Schaeffer gel system. Detects purified Abeta pE3. Complex samples like brain extracts still have to be tested. Boil membrane in PBS after blotting for 3min. IHC: Antigen retrieval with formic acid is required. IHC-P (FFPE): Antigen retrieval with citrate buffer pH 6, followed by formic acid treatment, is required for chromogenic detection. For chromogenic detection, an optimized AGR time of 20 minutes is recommended for best results.

Background

Amyloid deposits, also called plaques, of Alzheimer's patients consist of several protein components like the amyloid **beta**-peptides (**Abeta**, **Aβ**) 1-40/42 and additional C- and N-terminally truncated and modified fragments. Very abundant are the isoaspartate (isoAsp)-Abeta and **pyroglutamyl (pGlu)**-Abeta peptides. The latter are formed by cyclization of the N-terminal glutamate at position 3 or 11 catalyzed by glutaminyl cyclase (QC) resulting in very amyloidogenic and neurotoxic variants of Abeta; **Abeta-pE3** and Abeta pE11.

In contrast to extracellular plaques that do not perfectly correlate with Alzheimer's disease intraneuronal Abeta accumulation and vascular Abeta deposits have gained more and more evidence to be among the crucial factors responsible for progressive neuron loss.

Selected General References

- Pyroglutamate-Aβ 3 and 11 colocalize in amyloid plaques in Alzheimer's disease cerebral cortex with pyroglutamate-Aβ 11 forming the central core.
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- Anti-11[E]-pyroglutamate-modified amyloid β antibodies cross-react with other pathological Aβ species: relevance for immunotherapy.
Perez-Garmendia R et al. *J. Neuroimmunol.* (2010) PubMed:20864186
- Glutaminyl cyclase inhibition attenuates pyroglutamate Abeta and Alzheimer's disease-like pathology.
Schilling S et al. *Nat. Med.* (2008) PubMed:18836460
- Alternative pathways for production of beta-amyloid peptides of Alzheimer's disease.
Hook V et al. *Biol. Chem.* (2008) PubMed:18979625
- Isoaspartate-containing amyloid precursor protein-derived peptides alter efficacy and specificity of potential beta-secretases.
Böhme L et al. *Biol. Chem.* (2008) PubMed:18979630
- Inhibition of glutaminyl cyclase prevents pGlu-Abeta formation after intracortical/hippocampal microinjection in vivo/in situ.
Schilling S et al. *J. Neurochem.* (2008) PubMed:18627432
- Elevation of beta-amyloid peptide 2-42 in sporadic and familial Alzheimer's disease and its generation in PS1 knockout cells.
Wiltfang J et al. *J. Biol. Chem.* (2001) PubMed:11526104
- Physical, morphological and functional differences between pH 5.8 and 7.4 aggregates of the Alzheimer's amyloid peptide Abeta.
Wood SJ et al. *J. Mol. Biol.* (1996) PubMed:8601838
- Water-soluble Abeta (N-40, N-42) oligomers in normal and Alzheimer disease brains.
Kuo YM et al. *J. Biol. Chem.* (1996) PubMed:8626743

Access the online factsheet including applicable protocols at <https://susy.com/product/218611> or scan the QR-code.



TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies.** Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free (“no-frost”) freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C. Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C. Adding a carrier protein (e.g., BSA) enhances long-term stability. Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C. Adding a carrier protein such as BSA improves long-term stability. Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.