SYSY Antibodies

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Abeta-pE3

Cat.No. 218 011BT; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, labeled with Biotin.For **reconstitution** add 100 µl H_2O 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**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 100 up to 1 : 500 (see remarks) **ELISA**:
Label	biotin
Clone	2-48
Subtype	IgG1 (κ light chain)
Immunogen	Synthetic peptide corresponding to the amino terminal part of human Abeta-pE3 (UniProt Id: P05067)
Epitop	AA 3 to 7 from human Abeta-pE3 (UniProt Id: P05067)
Reactivity	Reacts with: human (P05067), rat (P08592), mouse (P12023). Other species not tested yet.
Specificity	Specific for Abeta-pE3.
Remarks	**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.

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

Background

Amyloid deposits, also called plaques, of Alzheimer's patients consist of several protein components like the **a**myloid **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 **p**yro**glu**tamyl (**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 References for 218 011BT

Transplantation of bone marrow derived macrophages reduces markers of neuropathology in an APP/PS1 mouse model.
Costa-Marques L, Arnold K, Pardon MC, Leovsky C, Swarbrick S, Fabian C, Stolzing A
Translational neurodegeneration (2019) 8: 33. . **IHC; tested species: mouse**

Identification of low molecular weight pyroglutamate A{beta} oligomers in Alzheimer disease: a novel tool for therapy and diagnosis.
Wirths O, Erck C, Martens H, Harmeier A, Geumann C, Jawhar S, Kumar S, Multhaup G, Walter J, Ingelsson M, Degerman-Gunnarsson M, et al.
The Journal of biological chemistry (2010) 28553: 41517-24. . **ELISA**

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.
Sullivan CP et al. Neurosci. Lett. (2011) PubMed:22001577

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://sysy.com/product/218011BT or scan the QR-code.

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.