SYSY Antibodies

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APP

Cat.No. 127 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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**: external data (see remarks) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 up to 1 : 1000 **IHC-P (FFPE)**: 1 : 500 up to 1 : 1000
Immunogen	Synthetic peptide corresponding to AA 756 to 770 from rat APP (UniProt Id: P08592)
Reactivity	Reacts with: rat (P08592), mouse (P12023), chicken, frog, human (P05067). Other species not tested yet.
Specificity	Specific for APP.
Matching control	127-0P
Remarks	**WB**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols. Cat. no. 127 003 is recommended for Western blotting.

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

Background

Alzheimer's disease is characterized by the accumulation of β-amyloid peptides in plaques and vessel walls and by the intraneuronal accumulation of paired helical filaments composed of hyperphosphorylated tau.
Amyloid **p**recursor **p**rotein **APP** is part of a super-family of transmembrane and secreted proteins. It appears to have a number of roles, including regulation of haemostasis and mediation of neuroprotection. APP also has metal and heparin-binding properties. Cleavage of amyloid precursor protein by β- and γ-secretases results in the generation of the Aβ (βA4)peptide, whereas α-secretase cleaves within the Aβ sequence and prevents formation from APP.
Recent findings indicate that the site of γ-secretase cleavage is critical to the development of amyloid deposits. Aβ1-42 is much more amyloidogenic than Aβ1-40. Aβ1-42 formation is favoured by mutations in the two presenilin genes (PS1 and PS2), and by the commonest amyloid precursor protein mutations.

Selected References for 127 002

Early intraneuronal accumulation and increased aggregation of phosphorylated Abeta in a mouse model of Alzheimer's disease.
Kumar S, Wirths O, Theil S, Gerth J, Bayer TA, Walter J
Acta neuropathologica (2013) 1255: 699-709. . **IHC**

Recruitment of the Mint3 adaptor is necessary for export of the amyloid precursor protein (APP) from the Golgi complex.
Caster AH, Kahn RA
The Journal of biological chemistry (2013) 28840: 28567-80. . **ICC**

Formic acid is essential for immunohistochemical detection of aggregated intraneuronal Abeta peptides in mouse models of Alzheimer's disease.
Christensen DZ, Bayer TA, Wirths O
Brain research (2009) 1301: 116-25. . **IHC-P; tested species: human**

Mint3/X11gamma is an ADP-ribosylation factor-dependent adaptor that regulates the traffic of the Alzheimer's Precursor protein from the trans-Golgi network.
Shrivastava-Ranjan P, Faundez V, Fang G, Rees H, Lah JJ, Levey AI, Kahn RA
Molecular biology of the cell (2008) 191: 51-64. . **WB; tested species: human**

Multi-protein assemblies underlie the mesoscale organization of the plasma membrane.
Saka SK, Honigmann A, Eggeling C, Hell SW, Lang T, Rizzoli SO
Nature communications (2014) 5: 4509. . **ICC; tested species: rat**

Computational method for calculating fluorescence intensities within three-dimensional structures in cells.
Caster AH, Kahn RA
Cellular logistics (2012) 24: 176-188. . **ICC; tested species: human**

Selected General References

The amyloid precursor protein of Alzheimer's disease and the Abeta peptide.
Storey E et al. Neuropathol. Appl. Neurobiol. (1999) PubMed:10215996

Molecular genetics of Alzheimer's disease.
Cruts M et al. Ann. Med. (1998) PubMed:9920359

Regulation of APP expression, biogenesis and metabolism by extracellular matrix and cytokines.
Beyreuther K et al. Ann. N. Y. Acad. Sci. (1996) PubMed:8624129

The role of APP processing and trafficking pathways in the formation of amyloid beta-protein.
Selkoe DJ et al. Ann. N. Y. Acad. Sci. (1996) PubMed:8624127

Access the online factsheet including applicable protocols at https://sysy.com/product/127002 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.