

## APP

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

### Data Sheet

|                         |   |
|-------------------------|---|
| Reconstitution/ Storage | 200 µl antiserum, lyophilized. For <b>reconstitution</b> add 200 µl H <sub>2</sub> O, then aliquot and store at -20°C until use.<br>For detailed information, see back of the data sheet. |
| Applications            | <b>WB:</b> 1 : 500 up to 1 : 1000 (AP staining)<br><b>IP:</b> not tested yet<br><b>ICC:</b> 1 : 500<br><b>IHC:</b> 1 : 500 up to 1 : 1000<br><b>IHC-P/FFPE:</b> 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).<br>Other species not tested yet.  |
| Specificity             | Specific for APP.   |
| Matching control        | 127-0P  |

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

Access the online factsheet including applicable protocols at <https://sysy.com/product/127002> or scan the QR-code.



## Background

Alzheimer's disease is characterized by the accumulation of  $\beta$ -amyloid peptides in plaques and vessel walls and by the intraneuronal accumulation of paired helical filaments composed of hyperphosphorylated tau.

**Amyloid precursor protein 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  $\beta$ - and  $\gamma$ -secretases results in the generation of the A $\beta$  (A $\beta$ 4) peptide, whereas  $\alpha$ -secretase cleaves within the A $\beta$  sequence and prevents formation from APP.

Recent findings indicate that the site of  $\gamma$ -secretase cleavage is critical to the development of amyloid deposits. A $\beta$ 1-42 is much more amyloidogenic than A $\beta$ 1-40. A $\beta$ 1-42 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) 125: 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) 288: 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) 19: 51-64. . **WB; tested species: human**

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, Cappai R  
Neuropathology and applied neurobiology (1999) 25: 81-97. .

Molecular genetics of Alzheimer's disease. Cruets M, Van Broeckhoven C  
Annals of medicine (1998) 30: 560-5. .

Regulation of APP expression, biogenesis and metabolism by extracellular matrix and cytokines. Beyreuther K, Multhaup G, Mönning U, Sandbrink R, Beher D, Hesse L, Small DH, Masters CL  
Annals of the New York Academy of Sciences (1996) 777: 74-6. .

The role of APP processing and trafficking pathways in the formation of amyloid beta-protein. Selkoe DJ, Yamazaki T, Citron M, Podlisny MB, Koo EH, Teplow DB, Haass C  
Annals of the New York Academy of Sciences (1996) 777: 57-64. .

# FAQ - How should I store my antibody?

## Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

## Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

## Product Specific Hints for Storage

### Control proteins / peptides

- Store at -20°C to -80°C.

### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

# Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.