SYSY Antibodies

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AP180

Cat.No. 155 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 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**: 1 : 1000 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 1000 **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 279 to 297 from rat AP180 (UniProt Id: Q05140)
Reactivity	Reacts with: human (O60641), rat (Q05140), mouse (Q61548), dog. Other species not tested yet.
Specificity	Specific for AP 180. K.O. validated PubMed: 26412491
Matching control	155-0P

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

Background

During neurotransmitter release synaptic vesicles fuse with the presynaptic plasma membrane. A whole protein machinery consisting of e.g. amphiphysin, clathrin, endophilin and synaptojanin is involved in the subsequent endocytotic recycling of the synaptic vesicles.
AP 180 also known as **pp155**, **NP185**, **F1-20**, and **SNAP 91** is a clathrin binding phospho-protein and faciliates the formation of clathrin coats.

Selected References for 155 003

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 3446187: 1023-8. . **WB, ICC, IHC; tested species: mouse,rat**

Physical exercise mediates cortical synaptic protein lactylation to improve stress resilience.
Yan L, Wang Y, Hu H, Yang D, Wang W, Luo Z, Wang Y, Yang F, So KF, Zhang L
Cell metabolism (2024) 369: 2104-2117.e4. . **WB, IP, IHC; tested species: mouse**

Pulse-Chase Proteomics of the App Knockin Mouse Models of Alzheimer's Disease Reveals that Synaptic Dysfunction Originates in Presynaptic Terminals.
Hark TJ, Rao NR, Castillon C, Basta T, Smukowski S, Bao H, Upadhyay A, Bomba-Warczak E, Nomura T, O'Toole ET, Morgan GP, et al.
Cell systems (2020) : . . **WB, IHC; tested species: mouse**

Selective endocytosis of Ca2+-permeable AMPARs by the Alzheimer's disease risk factor CALM bidirectionally controls synaptic plasticity.
Azarnia Tehran D, Kochlamazashvili G, Pampaloni NP, Sposini S, Shergill JK, Lehmann M, Pashkova N, Schmidt C, Löwe D, Napieczynska H, Heuser A, et al.
Science advances (2022) 821: eabl5032. . **WB; KO verified; tested species: mouse**

Quantitative Fluorescent in situ Hybridization Reveals Differential Transcription Profile Sharpening of Endocytic Proteins in Cochlear Hair Cells Upon Maturation.
Huang G, Eckrich S
Frontiers in cellular neuroscience (2021) 15: 643517. . **IHC; tested species: mouse**

AP180 promotes release site clearance and clathrin-dependent vesicle reformation in mouse cochlear inner hair cells.
Kroll J, Özçete ÖD, Jung S, Maritzen T, Milosevic I, Wichmann C, Moser T
Journal of cell science (2020) 1332: . . **IHC; KO verified; tested species: mouse**

Diffusional spread and confinement of newly exocytosed synaptic vesicle proteins.
Gimber N, Tadeus G, Maritzen T, Schmoranzer J, Haucke V
Nature communications (2015) 6: 8392. . **ICC; tested species: mouse**

Vesicular Synaptobrevin/VAMP2 Levels Guarded by AP180 Control Efficient Neurotransmission.
Koo SJ, Kochlamazashvili G, Rost B, Puchkov D, Gimber N, Lehmann M, Tadeus G, Schmoranzer J, Rosenmund C, Haucke V, Maritzen T, et al.
Neuron (2015) 882: 330-44. . **WB; KO verified; tested species: mouse**

Evidence for a Clathrin-independent mode of endocytosis at a continuously active sensory synapse.
Fuchs M, Brandstätter JH, Regus-Leidig H
Frontiers in cellular neuroscience (2014) 8: 60. . **IHC; tested species: rat**

Stiff person syndrome-associated autoantibodies to amphiphysin mediate reduced GABAergic inhibition.
Geis C, Weishaupt A, Hallermann S, Grünewald B, Wessig C, Wultsch T, Reif A, Byts N, Beck M, Jablonka S, Boettger MK, et al.
Brain : a journal of neurology (2010) 13311: 3166-80. . **ICC**

Synaptic and vesicular coexistence of VGLUT and VGAT in selected excitatory and inhibitory synapses.
Zander JF, Münster-Wandowski A, Brunk I, Pahner I, Gómez-Lira G, Heinemann U, Gutiérrez R, Laube G, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3022: 7634-45. . **WB**

Access the online factsheet including applicable protocols at https://sysy.com/product/155003 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.